



Operating Site Infections at Friendship Hospital Sino Guinean of Kipe

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To cite this article:

Camara Soriba Naby, Balde Oumar Taibata, Balde Abdoulaye Korse, Diawara Mamadou, Camara Mohamed, Camara Alpha Kabinet, Fofana Husseine, Diakite Sandaly, Soumaoro Labile Togba, Soumah Aboubacar Fode Momo, Conte Ibrahima, Camara Mariame, Toure Aboubacar, Diallo Aissatou Taran, Diallo Biro. Operating Site Infections at Friendship Hospital Sino Guinean of Kipe. *Advances in Surgical Sciences*. Vol. 8, No. 2, 2020, pp. 14-18. doi: 10.11648/j.ass.20200802.11

Received: June 19, 2020; **Accepted:** July 4, 2020; **Published:** August 13, 2020

Abstract: The aim of this study was to make our contribution to improving the quality of care for patients operated on at the Sino-Guinean Friendship Hospital. Introduction: The surgical site infections (ISO) are defined as infections occurring within 30 days after surgery (or up to a year after surgery in patients receiving implants) and affecting the incision or deep tissue site operative. Methodology: This study is a prospective, cross, a one time year from 1st January to 31 December 2018 inclusive: The study involved 73 patients carriers of surgical site infections during the study period in visceral trauma surgery and neurosurgery departments of the kipé sino- guinean friendship hospital. The administrative procedure and patient confidentiality were respected. We had done the encoding. Results: We had noted 33 cases of infection of the operating site in the trauma department, 19 cases in the neurosurgery department and 21 cases in the visceral surgery department. Smoking was found in 22 patients, obesity in 7 patients., alcoholism in 6 patients, HIV in 5 patients, diabetes in 4 patients and no history in 23 patients. The infection occurred between 1 to 7 days in 52 cases, 7 14 day in 20 cases and higher has 14 days in 1 case. The dressings were soiled in one hundred percent of our patients who developed surgical site infections. Conclusion: Infections of the operating site constitute a serious complication and feared by surgeons because it ruins the success of the surgical act.

Keywords: Infection, Operating Site, Friendship Hospital, Sino Guinean, Kipe

1. Introduction

Surgical care is an integral part of healthcare worldwide, with around 234 million operations performed each year. However, they are associated with a considerable risk of complications and death [1].

The most common surgical complications include: infection of operating sites (ISO), postoperative bleeding, pulmonary embolism, deep vein thrombosis, stroke and cardiovascular events [2].

Despite advances in surgery, surgical techniques and antibiotic prophylaxis, Operative Site Infections (ISO) remain the most common postoperative complications and one of the most common nosocomial infections in the world. The incidence of these infections has been estimated at 15.45% and 11.32% respectively by the Center for Disease Control and Prevention (CDC) of the United States and by Nosocomial Surveillance of infections in the United Kingdom [3].

Surgical site infections (ISO) occur in 3 to 5% of all surgical patients, and up to 33% of patients undergoing abdominal surgery [4].

According to CDC, Surgical site infections (ISO) are defined as infections occurring within 30 days after surgery (or up to a year after surgery in patients receiving implants) and affecting the incision or deep tissue at the operating site. There are three different types of surgical site infection defined by CDC: infection superficial infections incisional deep and infections involving organs or body areas [1].

According to a study carried out on the Quality of the operating room and prevention of infections of the operating site in the United States in 2013, it is estimated that more than 500,000 ISOs occur each year, with an increase in the length of stay, mortality and additional average costs of \$ 20,000 per infection [4].

In China, Keping CHENG and Col. Reported that the incidence of SSI in various hospitals varies from 13.0% to 18.0% and represented 25.0% of all nosocomial infections in 2015 [5].

Gabriel BIRGAND and Col. Reported that in France, seven (7) million surgical operations performed each year, with an incidence rate of ISO measured at 2-3%, thus generating between 140,000 and 200,000 ISO [6].

In Morocco, the prevalence of surgical site infections in operated patients is 5.3% according to a prevalence study of nosocomial infections conducted in 27 hospitals in the Mediterranean region [7].

In Mali, Bourama Baba et al reported a frequency of 7.8% in 2011 and in the DRC, the prevalence of operating site infections was 9.8% in 2007, according to the results of a study on the Prevalence surgical wound infections in Kinshasa [8-9].

In Guinea, according to the results of epidemiological surveillance of infections at the Ignace Deen national hospital in Conakry presented on Thursday September 28, 2017 (MATER day), the frequency of ISO was estimated at 10.25% (144 infections / 1405 interventions) in the service of

Maternity [10].

Ibrahima SD [11] in his doctoral thesis in 2016 to report a rate of 11% at the CMC in Ratoma and KOUNDOUNO FR [12] to report a rate of 10.43% at the regional hospital in Kankan in 2014.

2. Methodology

We are interested in patients who have performed surgery in hospital.

1. For the collection of our data, we used
 - A pre-established survey sheet;
 - Consultation registers;
 - Hospitalization records;
 - Operating protocol registers;
 - Patient records.

This is a study prospective description cross sectional, a period of six (6) months from the July 1st to December 31st 2018. The collection of data in last 6 months.

We respected the administrative procedure and the confidentiality of the patients.

2. Target population

We target all incoming patients and operated in the services surgery in the hospital of the Sino-Guinean friendship kipe during our study period. We process to the encoding to avoid taking the same patient twice.

3. Study population

The study to be really carried out on the operated patients and having presented an infection of the Operative site during our period of study.

4. Selection criteria

were included in our study, all patients operated in visceral surgical, trauma and neurosurgery who own developing surgical site infections during the study period.

- Not included in this study:

Patients not operated and hospitalized in the departments mentioned above who have not developed infections of the operating site.

We have conducted an exhaustive recruitment of all patients operated in visceral surgery, Trauma and Neurosurgery friendship hospital sinoguinean of kipe.

5. Collection procedure

For the collection of our data the following stages were respected:

- (1). Approval of the research protocol by the Chair of surgery,
- (2). Obtaining the investigation authorization form.
6. Study variable: Our study variables are quantitative and qualitative.

3. Results

Table 1. Distribution of patient according to the age group.

Tranche d'Age	Fréquence	%
0 - 20	20	27,40
20 - 40	36	49,32
40 - 60	13	17,81

Tranche d'Age	Fréquence	%
60 - 80	3	4,11
> 80	1	1,37
TOTAL	73	100

Tranche d'Age	Fréquence	%
0 - 20	20	27,40
20 - 40	36	49,32
40 - 60	13	17,81
60 - 80	3	4,11
> 80	1	1,37
TOTAL	73	100

Mean age = 29,589 +/- 16,27 ans âge from 2 to 80.

Table 2. Distribution of patients according to their history.

Land or vice	Frequency	%
No	37	51
Tobacco / cigarette	22	30
Obesity	7	10
Alcohol	6	8
HIV	5	7
Diabetes	4	5

Table 3. Distribution of patients on the signs of calls.

Clinical signs	Frequency	%
Contaminated dressing	73	100
Serosity / Pus	70	96
Abdominal pain	65	89
Fever	57	78
Physical asthenia	56	77
Anorexia	45	62
Dyspnea	29	40
Abdominal defense	19	26
Pallor	19	26
Skin redness	8	11
Vomiting	2	3

In our we recorded 73 cases of infection of the operating site, located in at different level.

Organ/space(7%), superficial(53%), deep(40%).

We had noted 33 cases of infection of the operating site in the trauma department, 19 cases in the neurosurgery department and 21 cases in the visceral surgery department.

4. Discussions

In our study, surgical site infections represented 10.25% (73 infections / 712 procedures) of all surgical procedures.

Our result is identical to that found by Expertise France in the context of the prevention of ISO in Maternity of the Ignace Deen hospital in Conakry in 2017 which reported a frequency of 10.25% (144 infections / 1405 intervention) [10] and lower to those found by Ouédraogo AS et al. [18] who reported an ISO incidence rate of 23.4% at CHU de Sanou by Bobo Dioulasso, those found by Demisew Amenu et al. [19] who reported an overall ISO rate was 11.4% and those found by GUETARNI Nadia [21] who reported an overall prevalence rate of 10.8% with a 95% CI (6% - 16%).

This high frequency of ISO in our study could be explained by the non-compliance with standards and procedures in the field of asepsis and antisepsis, insufficient

body hygiene, crowded rooms (luggage, bowl of mouse), outdoor patients.

Frequency in both services:

In our study the frequency of ISO was 26.02% (19 cases / 73) in visceral surgery, 45.20% (33 cases / 73) in trauma and 28.76% in neurosurgery.

This difference HIGH of the site infections operative in our various surgical services is explained by the lack of certain aseptic and antiseptic but by NEGLIGENCE some surgeons related to wearing in surgical gowns.

Age: in our study the age group of 20 - 40 years was the most represented with 49.32%. The average age of our patients was 29.59 +/- 16.27 years with extremes 2 - 80 years.

Our result is comparable to those found by Kelemu Abebe Gelaw et al. [17] Operating site infection and its associated factors following cesarean section: a cross-sectional study of a public hospital in Ethiopia in 2017, which reported that the most affected age group was 20 to 34 years old with a frequency of 89.3%.

These results demonstrate that the ISO would be to the prerogative of all ages if aseptic conditions and antisepsis are not met.

Profession: in our study the most represented socio-professional strata are housewives 21 cases (29.17%), cultivators 20 cases (27.78%) and pupils / students 12 cases (16.67%).

Mode of admission: emergencies made up more than half of our study with a frequency of 84% compared to 16% for those planned.

Land and vice: the most represented land and vice was Tobacco / cigarettes, ie 22 cases (30%) followed by obesity with 7 cases (10%).

Preoperative diagnosis:

Acute generalized peritonitis were the main pathologies cause s ISO with 26 cases soit 36% followed by acute appendicitis with 12 cases (16%) and inguinal hernia strangled 11 (15%).

This result is comparable to that of Koundouno Fr [11] who found a predominance of acute peritonitis with a frequency of 47.63% and different from that of Ibrahim SD [12] who reported a predominance of strangulated inguinal hernias with frequency of 39.14%.

During peritonitis there is a bacterial overgrowth making the surgery dirty and colonization of the surgery site by germs, which increases the risk of occurrence of ISO.

Risk factor:

Type of surgery or contamination class of Altemeier:

In our study, the patients in the dirty surgery class (Altemeier Class IV) were the most numerous with a rate of 50.68%.

This result can be superimposed on that of GUETARNI N [21] in his doctoral thesis which reported a high rate of dirty surgery with a frequency of 25%, different from those found by Nsiata N et al. [9] who found a predominance of contaminated surgery (class III of Altemeier) with a frequency of 44,6% and lower than those found by Kientega S. [20] in his doctoral thesis which reported a predominance

of dirty surgery with a rate of 81.82%.

This high rate in our series could be explained by the fact that most of our patients underwent a laparotomy for generalized acute peritonitis

Duration of the intervention:

The average duration was 89.58 +/- 45.71 min with the extremes of 20 and 165 min which is significantly lower than those found by Kientega S. [20] who reported an average duration of 110 min with the extremes of 50 and 410 min, greater than that of Ibrahima SD [12] who had found an average duration of 70 min with extremes ranging from 40 to 120 min and of Koundouno Fr. [11] who reported an average of 71 min with the extremes 30 to 125 min.

A prolonged duration of the intervention increases the risk of occurrence of infection of the operating site.

ASA and NNSI score: these scores were not evaluated in our study due to lack of data.

ISO timeframe:

In our study the time to onset of infection surgical site was between the 2nd day and the 14th day with an average of 5.57 +/- 2.15 days, which is close to those found by KIENTEGA S. et al [20] who found a delay between 2nd day and the 21th day with an average of and lower than those found by GUETARNI N [21] who reported an average delay of 9, 7 +/- 1, days and differ from Nsiata N et al [9] who found a delay in the onset of infection between 2-38 days.

This difference could be explained by a predominance of dirty / infected surgery in our series, therefore a source of early contamination.

ISO localization:

Superficial infection of the operating site was the most frequent with 53%.

This result corroborates that of KIENTEGA S. et al [20] who had found a rate of 56.4% of superficial infection, 89% of superficial infection according to Demise w Amenu et al. [19], 75% d infection according to Patrick C Sanger et al. [22], 68% of surface infection according to GUETARNI N [21]

ISO support:

The medical management was essentially based on: Antibiotherapy and Analgesic 100% of the cases, solutions of rehydration 89% of the cases and the blood transfusion 34% of the cases.

Surgical management was based on: simple dressing 67.12%, dressing and secondary siting 24.40% and secondary laparotomy 5.48%.

Antibiotic therapy:

The most widely used molecules were dual therapy consisting of Ceftriaxone + metronidazole (32.87%) followed by triple therapy with Ceftriaxone + Metronidazole + Gentamycin (26.03%).

Mortality:

We recorded a total of 20 deaths or 27%. KIENTEGA S. et al. [20] found a death rate at 14.54%, M. BOURAMA BABA DIARRA [8] reported an overall mortality rate of 10.3%. KOUNDOUNO FR [11] found a rate of 3.51% and Demisew Amenu et al. [19] found a death rate of 9%.

The high rate of our study could be explained by the occurrence of other complications in addition to infection of the operating site.

Duration of hospitalization:

The average length of hospital stay was 17.16 +/- 8.28 days with the extremes 5 and 46 days.

These results reflect that an infected patient sees his post operative stay prolonged resulting in an increase in the financial charges of the patient (costs of hospitalization, restoration, drugs...).

5. Conclusion

Infections of the operating site constitute a serious complication and feared by surgeons because it ruins the success of the surgical act. They are the most frequent post-operative complications (10.25%). The patients operated in emergencies are the most concerned. Its medical and surgical management focuses on antibiotic therapy and regular dressings. It is one of the causes of long stay of patients in hospital.

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